Macroeconomic Principles and Monetary Policy

J. Alfred Broaddus, Jr.

It's a great pleasure and honor for me to be invited to participate in this Forum, although I have to tell you that I was more than a little intimidated when I learned that I would be part of a panel featuring Bob King and Tom Sargent. I take some comfort, however, from what Mike Dotsey told me when he first contacted me about this program seven or eight months ago. He said the panel would focus on optimal monetary policy, but he wasn't expecting me to provide a highly technical analysis, or even a low-tech analysis. Instead, he wanted me to talk about how I, as one fairly senior Fed monetary policymaker, use economic analysis and principles to arrive at policy positions and then present and defend them. This I think I can do, although I still feel a little uneasy with Bob and Tom so close at hand.

The first thing I need to say is that I *do* try to base my policy positions on solid economic analyses, as do my FOMC colleagues. And throughout my 11-year tenure as Richmond Fed president I've been blessed with exceptional policy advisors and a strong research staff who've made this possible. My principal policy advisor, Marvin Goodfriend, is well known to all of you, I'm sure. Our research director, Jeff Lacker, Bob Hetzel, and several other members of our staff provide strong support. Mike Dotsey was an important part of our policy team before the Philadelphia Fed got lucky and he moved up here. Finally, we've developed long-term advisory relationships with several leading university economists, most notably, Bob King and Ben McCallum. All of these people have helped keep me reasonably abreast of ongoing research in monetary economics, and, appropriately, they've insisted—some

This article is the text of an address given by J. Alfred Broaddus, Jr., president of the Federal Reserve Bank of Richmond, before the Philadelphia Fed Policy Forum on Managing the Recovery in Uncertain Times, at the Federal Reserve Bank of Philadelphia, on November 14, 2003. The author thanks his colleague, Marvin Goodfriend, for his assistance in preparing these remarks. The views expressed here are the author's and not necessarily those of the Federal Reserve Bank of Richmond or the Federal Reserve System.

more vociferously than others—that I take advantage of what I've learned from them in formulating my policy positions. I've been happy to try to oblige.

Every once in a while I've heard people—including people close to and knowledgeable about the monetary policymaking process—opine that economic principles are not terribly important in the practical, day-to-day conduct of policy. Sure, they'll acknowledge, it's nice for central banks to support economic research related to policy and for staff economists to summarize the latest academic thinking for policymakers so that policymakers can participate effectively in policy discussions and debates with academic economists, the press, and others. But when the chips are down, the argument goes, and the FOMC sets the target level for the federal funds rate, the decision comes down to two things: (1) assessing what the latest economic and financial information says about the current condition of the economy and its prospects, and (2) determining how promptly and how strongly to respond to this information. Moreover, these judgments are strongly influenced by where the major economic indicators are expected to be in the period ahead in relation to their ranges in the past, and they are made with a generous amount of instinct and common sense.

Now there is more than a little truth in this characterization. I've been attending FOMC meetings at least part of the time since 1973, and I have certainly heard this view expressed in one way or another from time-to-time in the Committee's deliberations. Indeed, I've probably made comments like this myself.

It would be inaccurate and misleading, however, to suggest that this attitude has been a dominant one in the Committee either currently or in the past. On the contrary, economic analysis—including relatively recent developments in the professional economics literature—has frequently played a central role in determining policy, especially over the longer run. Unquestionably one of the Fed's greatest achievements over the last three decades was our role in, first, breaking the high inflation of the late 1970s and early '80s and, subsequently, helping bring the rate down to its current quite low level. The view that there was no exploitable systematic tradeoff between inflation and unemployment, which was gaining ground in the profession throughout the 70s, paved the way for this accomplishment. And the quantity theory corollary that central banks could control inflation by controlling money growth was its foundation.

Probably the best way I can describe how I use economics as a policymaker is to provide a few concrete examples drawn from my personal participation in FOMC meetings. (This may seem a bit self-centered, and I apologize if it does, but I think this is the best way for me to make the points I want to make.) As most of you no doubt know, full transcripts of FOMC meetings

are released to the public five years after a meeting.[1] Consequently, meeting transcripts are currently available through the meeting held December 16, 1997, which covers the first 40 meetings I attended as Richmond Fed president. I've reviewed these transcripts and selected three examples of how economic analysis guided my own thinking. The first involves my role in a "debate" regarding inflation targeting at the January 31–February 1, 1995, meeting. The second concerns my argument a few months earlier at the November 15, 1994, meeting that in principle the Fed should disengage as far as possible from foreign exchange market intervention. The final example comes from the May 20, 1997, meeting when I argued that an increase in trend productivity growth has important implications for interest rate policy not recognized by the macroeconomic models we typically use for monetary policy analysis.

In each case, I will describe briefly the context in which the policy issue came up and discuss the macroeconomic principle that guided my approach to the issue in question. Then, using the transcripts of the relevant FOMC meeting, I will describe how I used the principle as a basis for a policy recommendation. As always, the views that follow are my own and not necessarily those of any of my FOMC colleagues. This is, of course, a standard disclaimer that FOMC participants routinely recite. In this case, I have proof that my views are not necessarily those of my colleagues. Even a cursory reading of the relevant transcripts will make that abundantly clear.

1. INFLATION TARGETING (JANUARY 31–FEBRUARY 1, 1995, FOMC MEETING)

As you will remember, the first several quarters of the recovery from the 1990-91 recession were quite sluggish compared to most post-World War II recoveries up to that point. Real GDP grew at only a 2.6 percent annual rate from the trough in the first quarter of 1991 through mid-year 1993. Moreover, like the present recovery, it featured very weak growth in jobs, for which it also earned the sobriquet "jobless." In early 1994, however, the weakness in the economy began to abate, and the recovery gained momentum. By this time the CPI inflation rate had declined to 3 percent. To stimulate the recovery further, the Committee held the nominal funds rate at 3 percent for over a year. With inflation at 3 percent, the real funds rate was therefore zero. Most FOMC members[2] agreed that 3 percent inflation was not quite price stability, and probably everyone recognized that a zero real funds rate was inconsistent with containing inflation over the long run. Still, with the recovery only

[1] The transcripts are available on the Board of Governors website at www.federalreserve.gov/fomc/transcripts.

[2] Throughout this paper, references to FOMC members include non-voting as well as voting Reserve Bank Presidents.

beginning to accelerate as the year began, the strategy was to hold the line on inflation that year and then make the final step to price stability later.

The year 1994—my first as a voting member—turned out to be a moment of truth, or maybe I should say a year of truth, for the FOMC in the long fight for price stability. We were tested on two counts. First, there was an "inflation scare" in the bond market. The 30-year Treasury bond rate rose from a low of 5.9 percent in October 1993 to a peak of 8.2 percent in November 1994. Undoubtedly, a large portion of that increase reflected rising inflation expectations. Financial markets were far from confident that the Fed would succeed in containing inflation. Second, in February the Committee began to announce its funds rate target immediately after each FOMC meeting. This additional transparency meant that, henceforth, every interest rate action—or lack of action—would be scrutinized and second-guessed by the markets as never before.

In the event, we were able to raise the nominal funds rate by three percentage points between early 1994 and early 1995. And, since inflation held steady, the real funds rate rose by roughly the same amount over this period. The unemployment rate moved up following this tightening, but only slightly. Moreover, the long bond rate returned to about 6 percent, and people actually began to talk about the "death of inflation." It seems fairly clear in retrospect that our actions anchored inflation and inflation expectations. But, as we moved into 1995, I remember feeling that we'd been fortunate that we had accomplished this and that our credibility for low inflation was still not complete. The inflation scare in the bond market, in particular, made me think that we could still find ourselves in a position somewhere down the road where we would have to tighten policy sharply to shore up our credibility, with an attendant risk of setting off a recession.

It was in this context that I began to speak in FOMC meetings in favor of an inflation target. The initial discussions eventually led Chairman Greenspan to ask Governor Janet Yellen and me to lead a "debate" on inflation targeting at the January 1995 meeting. Janet spoke in opposition; I spoke in favor. The analytical principle that conditioned my support for targeting—rooted in the idea of rational expectations and reinforced strongly by discussions with Marvin and Bob Hetzel—was that by announcing an explicit long-run inflation objective, the FOMC would enhance the credibility of its commitment to low inflation and thereby reduce the risk that inflation would reaccelerate and, should it do so, reduce the cost of bringing it back down. In particular, I argued that anchoring inflation expectations more strongly with an explicit inflation objective would allow the FOMC to act more aggressively to help stabilize the economy in the short run, since with an explicit inflation anchor the Committee would be less concerned that such actions would reduce credibility and generate further inflation scares. In this environment, interest rate increases needed to hold the line on inflation would be less likely to cause recessions;

conversely, deep cuts in interest rates needed to stabilize the economy in a recession would be less likely to set off an inflation scare.

Let me fast-forward for a moment to the present. Inflation targeting has been receiving renewed attention recently. In the 1995 "debate," for a variety of reasons, I was willing to settle for an inflation objective that didn't necessarily include a numerical target. I felt that an FOMC commitment to the language of the proposed Neal Amendment,[3] for example, would suffice to capture the benefits I've just outlined. Today, however, with price stability achieved, I think a numerical range is definitely preferable. Specifically, our recent experience with disinflation and the proximity of the zero bound on the funds rate has convinced me that there is little to be gained—and considerable downside risk—in allowing trend inflation to drop below 1 percent. But if a lower inflation bound is warranted, then obviously (at least in my opinion) there should be an upper bound as well. For me, a 1 to 2 percent inflation target range for the core PCE would be acceptable.

I recognize that introducing an explicit inflation target would raise questions regarding exactly what its operational role would be in implementing policy. I am confident, though, that these issues could be addressed without unduly constraining the FOMC's traditional short-term stabilization policies. As I said in the 1995 debate, an inflation target "would not prevent the Fed from taking the kinds of policy actions that we take today to stabilize employment and output. What it *would* do (emphasis added) is to discipline us to justify our short-term actions designed to stabilize output and employment against our commitment to protect the purchasing power of our currency." I stand by that summary of the promise of inflation targeting.

2. INTERVENTION IN FOREIGN EXCHANGE MARKETS (NOVEMBER 15, 1994, FOMC MEETING)

My second example involves the viability of Federal Reserve participation with the U.S. Treasury in intervention operations in foreign exchange markets aimed at affecting the value of the U.S. dollar in these markets. A fundamental principle here, of course, is that intervention cannot have a sustained effect on the value of the dollar unless it is supported by basic monetary policy. Therefore, a problem arises immediately if the policy required to support a particular external objective for the dollar is inconsistent with the policy required to achieve broader domestic economic objectives. Beyond this, however, as I'll indicate in a moment, intervention can pose problems even where

[3] Representative Steve Neal of North Carolina proposed Amendments to the Federal Reserve Act in 1989, 1991, and 1993 that would have established price stability as the principal objective of Federal Reserve monetary policy. In the latter two years, the Amendment would have defined price stability as a condition where "the expected rate of change of the general price level ceases to be a factor in individual and business decisionmaking."

there are no direct conflicts between the policies required to support domestic and external objectives.[4]

In 1994 the Treasury and the Fed intervened frequently and visibly, often in conjunction with foreign central banks. These actions provoked an extended discussion of the Fed's participation in these operations at the November 1994 FOMC meeting. As the transcripts indicate, there was considerable disagreement among Committee members regarding the relative benefits and costs of this participation.

The comments I made in this discussion were guided by the principle that the Fed's credibility for low inflation is the foundation of effective monetary policy, and that public confidence in the Fed's independence in conducting monetary policy is the foundation of that credibility. Our experience over the preceding 15 years or more had made clear how difficult it is for the Fed to establish and maintain credibility. Consequently, I reasoned that we shouldn't allow anything to risk compromising our credibility.

Intervention, it seemed to me, did precisely that. The Fed is clearly the junior partner with the Treasury in foreign exchange intervention. To be sure, as a mechanical matter the Fed can follow the Treasury's lead in intervention operations without compromising its monetary policy independence by neutralizing the effect of its intervention actions on the funds rate through offsetting open market operations. There is little evidence, however, that such "sterilized" interventions can have a sustained effect on the exchange rate unless they are seen as signals of unsterilized policy actions in the future. Consequently, Fed participation in foreign exchange intervention with the Treasury risks creating doubt regarding whether monetary policy will support domestic or external objectives, and this confusion can undermine the credibility of the Fed's commitment to low inflation. I made this case in the November 1994 FOMC discussion. I also reminded the Committee of the high-profile, multination intervention in June of that year that was widely regarded in the press (including even non-national newspapers like the Richmond paper) as a failure. I argued that this kind of harshly negative publicity—even in a case, like this one, where the policy implications of the domestic and external objectives were not in direct conflict—could harm the Fed's credibility by creating an impression that the Fed was either unable or unwilling to achieve its policy goals more generally.

In sum, reasoning in this way, I concluded that the Fed had little, if anything, to gain and much to lose from participating in foreign exchange market interventions and that doing so would reduce the effectiveness of monetary policy over time. I therefore recommended at the November 1994 meeting that the Fed consider withdrawing from these operations, if not immediately,

[4] For a review of the issues surrounding foreign exchange market intervention, see Broaddus and Goodfriend (1996).

then gradually but persistently in some way. The meeting transcript shows that, while there was little support for my proposal to disengage, there was considerable sympathy with the logic of my argument and the economic rationale underlying it. Since that meeting, the FOMC has not formally changed its policy regarding intervention. But both the Treasury and the Fed have refrained from intervening in recent years. Circumstances have no doubt played a large role in this apparent reduction in the inclination to intervene, and I would certainly not claim that my statements in the FOMC meeting played any significant role in bringing this about. Whatever the reason for the change, however, the absence of these operations lately is clearly consistent with what economic analysis tells us about how to conduct monetary policy effectively.

3. INTEREST RATE POLICY AND HIGHER TREND PRODUCTIVITY GROWTH (MAY 20, 1997, FOMC MEETING)

From 1986 to 1990, non-farm business productivity grew only about 1.0 percent per year on average, which reflected the sustained slowdown in productivity growth that began in the mid-1970s. Trend productivity growth rose dramatically, however, in the 1990s; in fact, it tripled to an average of around 2.4 percent annually in the second half of that decade.

In 1996 and 1997, the FOMC began to recognize, along with other economic observers, the possibility that *trend* productivity growth might be undergoing a sustained increase. Economists understood that higher productivity growth would hold down inflation because it would take time for real wages to catch up. Unit labor costs would rise more slowly than the prices of final goods and services for a time and put downward pressure on inflation, as firms passed lower costs through to lower prices. Indeed, inflation hardly budged during the long boom in the late 1990s, even though labor markets tightened considerably. Rising trend productivity growth and the Fed's credibility for low inflation that I discussed earlier probably account to a considerable extent for the favorable inflation performance.

The implications of these developments seemed obvious. As long as rising productivity growth kept inflation low, the FOMC could refrain from raising its funds rate target. This was the generally held view when at the May 1997 FOMC meeting I brought up another channel, in addition to the unit labor cost channel, through which higher trend productivity growth might affect the choice of an appropriate funds rate target. I was motivated to do so by the possibility that trend productivity growth might have accelerated, which, as I just said, was beginning to be contemplated by the Committee.

In my economic statement at that meeting, I outlined this other channel as follows. I assumed that markets were confident that the Fed would hold the line on inflation so that inflation and inflation expectations would be stable.

How, in this situation, would higher trend productivity growth affect financial markets and real interest rates? Broadly, as I saw it, the improved productivity trend would cause firms to expect higher future earnings and workers to expect higher future wages. The point I emphasized was that at the then prevailing level of *real* interest rates, households and businesses would want to bring some of that expected increase in future income forward to the present. Workers might want to fix up their homes; firms might want to invest in new plant and equipment; and both households and businesses would try to finance such expenditures by borrowing against the expected future increases in income. Because the economy would not yet be producing this higher future income, however, real interest rates have to rise in order to prevent excessive *current* demand for goods and services from emerging. In other words, higher real interest rates would be required in order to raise the prices of goods and services consumed currently in terms of goods and services foregone in the future so that households and firms would be content to wait until the economy had actually produced the higher expected future output before trying to consume or invest it. The point was that, even if trend productivity growth were rising, and this increase reduced the inflation risk, real interest rates *still* needed to rise to prevent an unsustainable, credit-driven increase in aggregate demand that could lead to an unsustainable real boom.

My argument got no response during the FOMC discussion, although subsequently several Committee members expressed interest in it. In retrospect, though, I think the point looks pretty good. With the benefit of hindsight, the Committee might have done well to raise the funds rate target a little sooner than it did during the late 1990s boom. A somewhat more preemptive tightening of policy might have prevented some of the excess investment during the boom, and therefore the resulting weak investment that helped generate the recession and—until recently at least—slow the subsequent recovery.

As I indicated at the outset, my assignment today is to illustrate how economic analysis conditions my thinking about policy. In this particular case, the analytical result I just summarized, and that I used in the FOMC discussion, came from the "New Neoclassical Synthesis" macromodel we use at the Richmond Fed to think about monetary policy.[5] This "NNS" model has a real business cycle core that integrates growth and fluctuations, and it also has sticky prices that allow monetary policy to play a role in stabilizing inflation and employment. In this framework, it's easy to see the implications of an increase in trend productivity growth for interest rate policy. In particular, one can consider two NNS economies, where both have stable prices and full employment, and where consumption, investment, and output are all growing at the same rate as productivity. The only difference is that in one economy

[5] See Goodfriend (2002).

productivity is growing more rapidly than the other. The model shows that, in balanced growth equilibrium, the faster growing economy must have a higher real interest rate. If the central bank in this economy does not recognize this and holds real short rates below the equilibrium rate, borrowing and spending will exceed potential output in the short run and create an unsustainable boom in consumption, investment, and employment. The model cannot predict exactly how the boom will collapse if the central bank holds short-term rates too low for too long. It may end with accelerating inflation. Alternatively, where—as in the current cycle—the Fed has credibility for low inflation, it could end in recession accompanied by disinflation.

4. CONCLUSION

I hope these examples have illustrated reasonably clearly how at least one policymaker has used economic analysis in developing and arguing monetary policy positions in recent years. In particular, I hope the examples have suggested the scope of the opportunity for modern analytical tools to improve policy. Most importantly, I hope this discussion has helped underline the point I made at the outset: that while carefully monitoring incoming data and the evolution of the near-term outlook for the economy is an essential component of successful policymaking, it absolutely must be accompanied by solid economic analysis based on high quality research if monetary policy is to be as effective as it can be. I believe this need is well understood by my FOMC colleagues, and while this recognition may not have produced optimal monetary policy, I think it's definitely improved policy over the last two decades.

REFERENCES

Broaddus, J. Alfred, Jr., and Marvin Goodfriend. 1996. "Foreign Exchange Operations and the Federal Reserve." Federal Reserve Bank of Richmond *Economic Quarterly* 81 (Winter): 1–19.

Goodfriend, Marvin. 2002. "Monetary Policy in the New Neoclassical Synthesis: A Primer." *International Finance* 5 (2): 165–91.